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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/559,175	04/27/2000	Wataru Matsumoto	2611-0125P	2265

7590 03/21/2007  
Birch Stewart Kolasch & Birch LLP  
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Falls Church, VA 22040-0747

EXAMINER
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HARPER, KEVIN C

ART UNIT	PAPER NUMBER
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2616

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/21/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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<b>Office Action Summary</b>	<b>Application No.</b> 09/559,175	<b>Applicant(s)</b> MATSUMOTO ET AL.	
	<b>Examiner</b> Kevin Harper	<b>Art Unit</b> 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 20 February 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 2-4,6-8,10-12,14-30,32 and 33 is/are pending in the application.
- 4a) Of the above claim(s) 32 and 33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-4,6-8,10-12 and 14-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 20, 2007 has been entered.

***Election/Restrictions***

Newly submitted claims 32-33 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

Claims 32-33 are drawn to determining the number of bits transmitted per symbol, classified in class 370, subclass 468; whereas, the original claims are drawn to transmitting symbols within a particular period, classified in class 370, subclass 498.

The inventions are distinct, each from the other because of the following reasons:

The inventions are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, subcombination of claims 32-33 has separate utility such as providing a sufficient signal-to-noise level for a transmitted symbol. See MPEP § 806.05(d).

Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions have acquired a separate status in the art in view of their different classification and the inventions

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require a different field of search (see MPEP § 808.02), restriction for examination purposes as indicated is proper.

1. Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 32-33 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

### ***Response to Arguments***

Applicant's arguments filed February 20, 2007 have been fully considered and are persuasive. The indicated allowability of the claims is withdrawn in view of the newly discovered references to Malcolm et al. and Chow. Rejections based on the newly cited references follow.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 3, 7, 11 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Malcolm et al. (US 5,781,540).

2. Regarding claims 3, 7, 11 and 15, Malcolm discloses a communication system (fig. 1) that sets a periodic transmission timing in accordance with a network transmission path (abstract, lines 1-11) such that each period includes a data transmission time which is suitable for data transmission in the period (note: assigned time slot in the frame - col. 8, lines 57-60) and a quasi-data transmission period which is the time other than the data transmission time in the same period (note: other assigned time slots - fig. 7), where first and second data are transmitted by multiplexing (fig. 9, items 308, 310, and/or 312). The communication system includes a set of data bits to be transmitted over several periods of the transmission timing (col. 1, lines 35-47) and the data bits are organized into units of symbols (fig. 9) and assigned bit spaces allocated for transmission in such a manner that all the data bits in each of the symbols are transmitted on the network transmission path during the data transmission time of the same period of the transmission timing (fig. 7, access slot, item 300 or 302; fig. 9 - guard time). The data bits of the first data (fig. 9, item 312) are transmitted during a particular period of the transmission timing are organized into symbols that are transmitted on the network transmission path during the data transmission time of the particular period. The data bits of the second data (fig. 9, item 308 or 310) are transmitted during the particular period are organized into one or more symbols which are transmitted on the network transmission path in the portion of the data transmission time of the particular period where the first data has not been assigned. Further regarding claims 7 and 15, the transmitted data is reproduced at the receiver (fig. 2; col. 8, line 60 through col. 9, line 10).

Claims 2, 4, 6, 8, 10, 12, 14, 16-17 and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Chow (US 6,009,122).

3. Regarding 2, 4, 6, 8, 10, 12, 14, 16-17, 24, Chow discloses a transmission device (fig. 5) that transmits a set of data bits according to a periodic transmission timing (fig. 4) where each period

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includes a first and second transmission timing (col. 9, lines 14-21; note: more than one downstream/upstream frame per superframe - fig. 8) and the data bits are transmitted over several periods of the transmission timing. The device organizes data bits into units of data symbols (fig. 5), allocates a constant number of data bit spaces for transmission during each period of the transmission timing (fig. 8; note: frames per superframe; col. 15, lines 52-57), where the data spaces are allocated to achieve a higher transmission rate during the first transmission time than the second transmission time (fig. 8; col. 11, lines 17-25; col. 14, lines 5-30; fig. 9; note: FEXT periods versus NEXT periods), and assigns the data bits in the data symbols to the allocated data bit spaces such that all of the data bits in each data symbol are transmitted from the transmission device during the same period of the transmission timing (fig. 4, Q; note: all symbols are transmitted within the assigned times and no data symbols are transmitted in the quiet times - col. 2, lines 37-39). Further regarding claims 2, 4, 6, 8, 10, 12 14 and 16, the suitable data transmission time is represented by higher interference periods (i.e., FEXT periods) and the other time period is represented by lower interference periods (i.e., NEXT periods), where any data can be transmitted during those two periods of the frame or superframe (col.2, lines 55-60; col. 7, lines 32-41; col. 8, lines 41-60; col. 10, line 32 through col. 11, line 25). Further regarding claims 8 and 16, the transmitted data is reproduced at the receiver (fig. 2; col. 8, line 60 through col. 9, line 10).

### ***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 18-23 and 25-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chow (US 6,009,122).

4. Regarding claims 18 and 25, Chow does not disclose transmitting no data within a given time period. However, Chow discloses transmitting less data during a NEXT time period that is subject to more interference (col. 10, line 66 through col. 11, line 25). Therefore, it would have been obvious one skilled in the art at the time the invention was made to transmit no data during the second time period in the invention of Chow in order to prevent the transmission of unacceptable data (col. 10, lines 45-65; col. 14, lines 10-11; figs. 10A-10B, step 1008).
5. Regarding claims 19 and 26, the first transmission timing corresponds to FEXT (col. 10, lines 39-45).
6. Regarding claims 20 and 27, the data symbols are transmitted during respective times during frames and superframes (fig. 4; col. 11, lines 43-46;).
7. Regarding claims 21-23 and 28-30, the bits may be allocated uniformly and are assigned as necessary (col. 13, lines 60-64; note: the bit allocations may be the same for several symbols or frames), where the time periods correspond to NEXT and FEXT (col. 2, lines 55-60; col. 7, lines 32-41; col. 8, lines 41-60; col. 10, line 32 through col. 11, line 25).


### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Harper whose telephone number is 571-272-3166. The examiner can normally be reached weekdays from 11:00 AM to 7:00 PM ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn Feild, can be reached at 571-272-2092. The centralized fax number for the Patent Office is 571-273-8300. For non-official communications, the examiner's personal fax number is 571-273-3166 and the examiner's e-mail address is kevin.harper@uspto.gov.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications associated with a customer number is available through Private PAIR only. For more information about the PAIR system, see [portal.uspto.gov](http://portal.uspto.gov). Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kevin C. Harper

March 18, 2007